

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Lab Services - Knoxville Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL - Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Geoff Klein

TDEC-DWS 200 East Race St Knoxville, TN 37763

N00004011 Lab ID:

Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

N00004011001

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

01/15/2009 10:00

Sampler's Name:

BRANDY LONG

County: Sample Matrix: ROANE - 73

Water

EFO:

Knoxville

Sampling Agency: Billing Code:

TDEC-DWS

Send Report To:

327.39-12 **TDEC-DWS**

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

12:45 01/15/2009

Received By:

L Barrociere

pH:	
Chlorine,	residual:
A1 11	

Field Determinations

Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Alkalinity, Total	, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	50	mg/L	3.8	10	S Burchfield	1/16/2009	

TEST: Hardness, Calcium	ME	THOD: SM 350	0-Ca D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	40	mg/L	0.7	1	M Chen	1/16/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004011002

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected:

10:05 01/15/2009

Sampler's Name:

BRANDY LONG

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-DWS

Billing Code:

327.39-12

Send Report To:

TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

01/15/2009 12:45

Received By:

L Barrociere

Field Determinations pH: Chlorine, residual:

Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Alkalinity, Total	ME	ΓHOD: EPA 31	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	54	mg/L	3.8	10	S Burchfield	1/16/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D				······································		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	40	mg/L	0.7	1	M Chen	1/16/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004011003

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected:

01/15/2009 11:00

Sampler's Name:

BRANDY LONG

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-DWS 327.39-12

Billing Code: **Send Report To:**

TDEC-DWS TDEC-DWS

Agency Invoiced: **Priority Date:**

Date/Time Received:

01/15/2009 12:45

Received By:

Total Alkalinity

L Barrociere

		-				
TEST: Alkalinity, Total	ME:	THOD: EPA 31	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE

mg/L

76

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

1/16/2009

Conductivity:

Temperature:

Other:

Flow:

3.8

10

S Burchfield

TEST: Hardness, Calcium	ME.	THOD: SM 350	0-Ca D		•	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	50	mg/L	0.7	1	M Chen	1/16/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

Project Name:

N00004011004

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

01/15/2009 11:05 **BRANDY LONG**

Sampler's Name: County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing_Code:_ Send Report To: TDEC-DWS 327.39-12

Agency Invoiced:

TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

01/15/2009 12:45

Received By:

L Barrociere

TEST: Alkalinity, Total	ME ⁻	THOD: EPA 31	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	68	mg/L	3.8	10	S Burchfield	1/16/2009

Field Determinations

CFS

Chlorine, residual:

Conductivity:

Temperature: **Dissolved Oxygen:**

pH:

Other:

Flow:

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	50	mg/L	0.7	1	M Chen	1/16/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



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TDH: Lab Services KRL - Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

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Geoff Klein

TDEC-DWS 200 East Race St Knoxville, TN 37763 Lab ID: N00004011

Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

N00004011001

Project Name:

Sample Description:

otion: KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected: Sampler's Name:

01/15/2009 10:00 BRANDY LONG

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency:

Knoxville TDEC-DWS

Billing Code: Send Report To:

327.39-12 TDEC-DWS TDEC-DWS

Agency Invoiced: Priority Date:

Date/Time Received:

01/15/2009 12:45

Received By:

L Barrociere

Field Determinations pH: Chlorine, residual:

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other: Flow:

CFS

TEST: Digestion Metals	MET						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	01/16/2009				M Pattanayek	1/16/2009	

TEST: ICP-MS	ME	METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL .	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/16/2009
Barium	19	μg/L	2.5	5	M Pattanayek	1/16/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/16/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/16/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	1/16/2009
Cobalt	0.11J	μg/L	0.04	1	M Pattanayek	1/16/2009
Lead	U	μg/L	0.10	1	M Pattanayek	1/16/2009
Manganese	1.9	μg/L	0.42	1	M Pattanayek	1/16/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	1/16/2009
Thallium	0.84J	μg/L	0.03	1	M Pattanayek	1/16/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/16/2009

TEST: Mercury	ME					
ANALYTE	RESULT	UNITS MDL		MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/16/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004011002

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected: Sampler's Name:

01/15/2009 10:05 **BRANDY LONG**

County:

ROANE - 73

Sample Matrix:

Water

EFO: **Sampling Agency:** Knoxville TDEC-DWS

Billing Code: Send Report To: 327.39-12 TDEC-DWS TDEC-DWS

Agency Invoiced: **Priority Date:**

Date/Time Received:

01/15/2009 12:45

Received By:

L Barrociere

pH: Chlorine, residual:

Field Determinations

Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL AN	ANALYZED BY:	DATE
Digestion Metals	01/16/2009				M Pattanayek	1/16/2009

TEST: ICP-MS	ME	THOD: EPA 200				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	· U	μg/L	0.93	5	M Pattanayek	1/16/2009
Barium	25	μg/L	2.5	5	M Pattanayek	1/16/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/16/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/16/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	1/16/2009
Cobalt	0.33J	μg/L	0.04	1	M Pattanayek	1/16/2009
Lead	0.60J	μg/L	0.10	1	M Pattanayek	1/16/2009
Manganese	44	μg/L	0.42	1	M Pattanayek	1/16/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	1/16/2009
Thallium	0.27J	μg/L	0.03	1	M Pattanayek	1/16/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/16/2009

TEST: Mercury	ME	METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/16/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004011003

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected: Sampler's Name:

01/15/2009 11:00 BRANDY LONG

County: Sample Matrix: ROANE - 73

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-DWS 327.39-12

Send Report To: Agency Invoiced: TDEC-DWS
TDEC-DWS

Priority Date:

Date/Time Received:

01/15/2009 12:45

Received By:

L Barrociere

Field Determinations pH:

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other: Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/16/2009				M Pattanayek	1/16/2009

TEST: ICP-MS	ME	ΓHOD: EPA 20	D: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL.	ANALYZED BY:	DATE	
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/16/2009	
Barium	28	μg/L	2.5	5	M Pattanayek	1/16/2009	
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/16/2009	
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/16/2009	
Chromium	U	μg/L	2.0	5	M Pattanayek	1/16/2009	
Cobalt	0.14J	μg/L	0.04	1	M Pattanayek	1/16/2009	
Lead	0.14J	μg/L	0.10	1	M Pattanayek	1/16/2009	
Manganese	8.9	μg/L	0.42	1	M Pattanayek	1/16/2009	
Selenium	U	μg/L	1.3	5	M Pattanayek	1/16/2009	
Thallium	0.14J	μg/L	0.03	1	M Pattanayek	1/16/2009	
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/16/2009	

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.13	0.2	A Wilson	1/16/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004011004

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:01/15/200911:05Sampler's Name:BRANDY LONGCounty:ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Billing Code:

Send Report To:

Knoxville TDEC-DWS 327,39-12 TDEC-DWS TDEC-DWS

Agency Invoiced: Priority Date:

Date/Time Received: 01/15/2009 12:45

Received By:

L Barrociere

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other: Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/16/2009			,	M Pattanayek	1/16/2009

TEST: ICP-MS	ME.	METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/16/2009
Barium	29	μg/L	2.5	5	M Pattanayek	1/16/2009
Beryllium	U	μg/L	0.11	. 1	M Pattanayek	1/16/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/16/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	1/16/2009
Cobalt	0.08J	μg/L	0.04	1	M Pattanayek	1/16/2009
Lead	U	μg/L	0.10	1	M Pattanayek	1/16/2009
Manganese	0.53J	μg/L	0.42	1	M Pattanayek	1/16/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	1/16/2009
Thallium	0.09J	μg/L	0.03	1	M Pattanayek	1/16/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/16/2009

TEST: Mercury	ME.	METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/16/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit